

Allowability of Claims Over Kauser

Claims 34-36, 40-48 and 51-55 stand rejected under 35 U.S.C. 102 as being unpatentable over US 5,724,660 (Kauser).

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Novelty of Claims 34-36, 40-47, 54 and 55 Over Krauser

Contrary to the Examiner's assertion, Kauser fails to disclose or suggest the limitations of the claimed inventions for the reasons discussed more fully below.

10 Kauser discloses generally a network-based scheme for locating mobile telephones. Particularly, in Kauser, a cellular communications network includes a mobile location module (MLM) (230) that determines the location of mobile telephones, for example, in response to 911 calls, based upon information provided by the mobile telephone.

15 In the inventions of Claims 34-36, 40-47, 54 and 55 the location of the mobile wireless handset is determined at the mobile station, not at the network (the MLM) as in Kauser. Thus, contrary to the Examiner's assertion, Kauser does not disclose a method in the "... communications handset ..." of Claims 34 and 44 or in the "cellular device" of Claim 55. The rejection of mobile device method Claims 34-36, 44-46, 54 and 55 under 35 USC is therefore improper since Kauser determines 20 location in the network. Kindly withdraw the rejection under 35 USC 102.

Non-Obviousness Over Krauser

As noted, Krauser computes the location of mobile telephones at a 25 network based upon information provided by the mobile telephone. Particularly, Krauser determines location at the MLM (230) based on mobile assisted hand-off MAHO information and signal strength information received from the mobile station. Kauser, col. 6, lines 1-23. The MLM (230) uses the signal strength (RSSI) and propagation path slope (B) information to estimate distances (d_1, d_2, d_3) of the mobile

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from at least three base station transmitters having known locations. Kauser, col. 6, line 34- col. 7, line 41. The intersection of circles about the three base stations having radii corresponding to the estimated distances (d_1 , d_2 , d_3) corresponds to the location of the handset. Kauser, col. 7, line 43-50. Kauser discloses an elaborate scheme for improving the estimation of the propagation path slope, B. The MLM (230) in the network of Kauser also uses GPS location information provided by the mobile telephone to more accurately compute the location of the mobile station. Kauser, col. 3, lines 10-15 and col. 11, line 43- col. 12, line 21.

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Discussion of Allowability of Claims 34-43

Regarding independent Claim 34, Kauser fails to disclose or suggest a "... method in a mobile wireless communications handset ..." comprising

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... receiving base station location information of a cellular communication base station;

receiving base station cellular area information for the cellular communication base station for which the base station location information is received;

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determining a coarse location of the mobile wireless communications handset based on the base station location information and on the cellular area information.

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As noted, Kauser computes location at the network by estimate the distance of the mobile station from three base stations and then triangulating based on the distance computations. Kauser does not determine "... a coarse location of the mobile wireless communications handset based on the base station location information and on the cellular area information." Thus Claims 34 and the claims that depend therefrom are patentably distinguished over Kauser.

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Regarding Claim 35, dependent from Claim 34, Kauser fails to disclose or suggest "... determining a refined location of the mobile wireless communication handset based on the coarse location" in combination with the limitations of Claim

34. Kauser uses mobile station derived GPS information to refine a network based location determination. Claims 39 and 42 recite similar limitations. Claims 35 and 39 and 42 are thus further patentably distinguished over Kauser and in condition for allowance.

5 Regarding Claim 36, dependent from Claim 34, Kauser fails to disclose or suggest "... reducing a GPS search space with the coarse location when determining the GPS based location of the mobile wireless communications handset" in combination with the limitations of Claim 34. Kauser uses GPS information to refine a network based location determination, and thus there is no reason for Kauser to reduce the GPS search space based on the network based location estimation. 10 Claim 36 is thus further patentably distinguished over Kauser and in condition for allowance.

15 Regarding Claim 37, dependent from Claim 34, Kauser fails to disclose or suggest "... receiving a bearing and bearing angular width information for the cellular communication base station, determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, the bearing and the bearing angular width information" in combination with the limitations of Claim 34. Contrary to the Examiner's assertion, there is no disclosure or suggestion in Kauser for the use of bearing and bearing angular width information alone or in combination with the other claimed information to compute location. Claim 37 is thus further patentably 20 distinguished over Kauser and in condition for allowance.

25 Regarding Claim 38, dependent from Claim 37, Kauser fails to disclose or suggest "... determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, the bearing and the bearing angular width information, and the power measurement" in combination with the limitations of Claim 34 and 37. Contrary to the Examiner's assertion, there is no disclosure or suggestion in Kauser for the use of bearing and bearing angular width information.

Claim 38 is thus further patentably distinguished over Kauser and in condition for allowance.

Regarding Claim 40, dependent from Claim 34, Kauser fails to disclose or suggest "... receiving bearing information from the cellular communication base station, determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, and the bearing information" in combination with the limitations of Claim 34. Contrary to the Examiner's assertion, there is no disclosure or suggestion in Kauser for the use of bearing information to determine location. Claim 40 is thus further patentably distinguished over Kauser and in condition for allowance.

Regarding Claim 41, dependent from Claim 34, Kauser fails to disclose or suggest "... determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, the bearing information, and the power measurement" in combination with the limitations of Claim 34. Contrary to the Examiner's assertion, there is no disclosure or suggestion in Kauser for the use of bearing and bearing angular width information. Claim 41 is thus further patentably distinguished over Kauser and in condition for allowance.

Regarding Claim 43, dependent from Claim 34, Kauser fails to disclose or suggest "... determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, and the power measurement" in combination with the limitations of Claim 34. Kauser uses mobile station derived GPS information to refine a network based location determination. Claim 43 is thus further patentably distinguished over Kauser and in condition for allowance.

Discussion of Allowability of Claims 44-46

Regarding independent Claim 44, Kauser fails to disclose or suggest a "... method in a mobile wireless communications handset ..." comprising

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receiving bearing information from a plurality of at least two base stations,

determining a coarse location of the mobile wireless communications handset based on the bearing information;

10 determining a refined location of the mobile wireless communication handset based on the coarse location.

As noted above in connection with the allowability of Claim 40, contrary to the Examiner's assertion, there is no disclosure or suggestion in Kauser for the use of bearing information to determine location. Claim 44 is further 15 patentably distinguished over Kauser and in condition for allowance.

Regarding Claim 45, dependent from Claim 44, Kauser fails to disclose or suggest "... determining the refined location by determining a GPS based location of the mobile wireless communications handset, reducing a GPS search space when 20 determining the GPS based location by basing the GPS location determination on the coarse location" in combination with the limitations of Claim 44. Kauser uses GPS information to refine a network based location determination, and thus there is no reason for Kauser to reduce the GPS search space based on the network based 25 location estimation. Claim 45 is thus further patentably distinguished over Kauser and in condition for allowance.

Regarding Claim 46, dependent from Claim 44, Kauser fails to disclose or suggest "... receiving base station location information of a cellular communication base station; receiving base station cellular area information for the cellular communication base station for which the base station location information is received; determining the coarse location of the mobile wireless communications 30 handset based on the base station location information, on the cellular area

information, and the bearing information" in combination with the limitations of Claim 44. Kauser does not compute position based on cellular area or bearing information. Claim 46 is thus further patentably distinguished over Kauser and in condition for allowance.

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Discussion of Allowability of Claims 47-48 and 51-55

10 Regarding independent Claim 47, Kauser fails to disclose or suggest a "... method in a cellular communication system comprising a network of cellular base stations ..." comprising

15 transmitting base station location information from at least one cellular base station;
 transmitting a cellular area of the at least one cellular base station for which the base station location information is transmitted;
 transmitting bearing information of the base station.

20 Generally, Kauser does not suggest transmitting network information to the mobile station, since Kauser does not compute position at the mobile station. Kauser in fact transmits information from the mobile telephone to the network for computing position. Also, Kauser does not disclose or suggest computing position at the mobile station based upon "cellular area" and "bearing" information. Claim 47 is thus patentably distinguished over Kauser and in condition for allowance.

25 Dependent Claim 48 is allowable for at least the same reasons as Claim 47, since Kauser does not disclose or suggest "... determining a coarse location of a mobile wireless communication device in the network based upon the base station location information, the cellular area, and the bearing information of the at least one cellular base station" as discussed above.

30 Dependent Claim 51 is allowable for at least the same reasons as Claim 47 and also because Kauser does not disclose or suggest "... determining the coarse

location of the mobile wireless communication device in the network based upon the base station location information, the cellular area of corresponding cellular base station, the bearing information, and the power measurement" as discussed above.

Claim 52 is allowable for at least the same reasons as Claim 47 and also because Kauser does not disclose or suggest "... transmitting the base station location information, the cellular area, and the bearing information in a Provide Base Station Almanac Message."

Claim 53 is allowable for at least the same reasons as Claim 47 and also because Kauser does not disclose or suggest "... transmitting the base station location information, the cellular area, and the bearing information in a common message.

Regarding independent Claim 54, Kauser fails to disclose or suggest a "... method in a cellular device ..." comprising

receiving base station location information for at least one base station;

receiving a cellular area information for the base station for which the base station location information is received;

receiving bearing information of the base station for which the base station location information and the cellular area information are received.

Generally, Kauser does not suggest transmitting network information to the mobile station, since Kauser does not compute position at the mobile station. Kauser in fact transmits information from the mobile telephone to the network for computing position. Also, Kauser does not disclose or suggest computing position at the mobile station based upon "cellular area" and "bearing" information. Claim 54 is thus patentably distinguished over Kauser and in condition for allowance.

Claim 55 is allowable for at least the same reasons as Claim 47 and also because Kauser does not disclose or suggest "... receiving the base station location information, the cellular area information, and the bearing information in a common message.

SOUSSI ET AL.
"Method of Enabling Low Tier Location Applications"
Atty. Docket No. PF01963NA

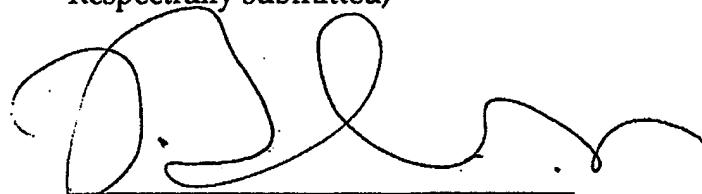
Appl. No. 09/651,382
Examiner J. Lee
Art Unit 2682

In view of the discussion and any amendments above, it is submitted that the pending claims are in condition for allowance. Kindly withdraw any rejections and objections and allow the claims to issue as a United States Patent without further delay.

5 A telephone interview with the Examiner is requested upon the Examiner's careful review of the present response, prior to preparation of an official action in reply thereto. Please contact the undersigned at the telephone number below.

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Respectfully submitted,



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